FlyBy Math™ Alignment
Missouri Mathematics
Grade-Level Expectations

Strand: Number and Operations

3. Compute fluently and make reasonable estimates

E. Use proportional reasoning

Grade-Level Expectation	***FlyBy Math*™ Activities**
Solve problems involving proportions. **(**MA 1 3.3)	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use calculations and experimental evidence to predict, describe, and explain several aircraft conflict problems.

Strand: Algebraic Relationships

1. Understand patterns, relations and functions

B. Create and analyze patterns

Grade-Level Expectation	***FlyBy Math*™ Activities**
Generalize patterns using explicitly or recursively defined functions **(**MA 4 1.6,3.6)	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

C. Classify objects and representations

Grade-Level Expectation	***FlyBy Math*™ Activities**
Compare and contrast various forms of representations of patterns. **(**MA 4 1.6)	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

E. Describe the effects of parameter changes

Grade-Level Expectation	***FlyBy Math*™ Activities**
Describe the effects of parameter changes on linear functions **(**MA 4 1.6, 4.1)	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the

	same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.
2. Represent and analyze mathematical situations and structures using algebraic symbols	
A. Represent mathematical situations	
Grade-Level Expectation Use symbolic algebra to represent and solve problems that involve linear relationships, including absolute value and recursive relationships. (MA 4 1.6,3.1)	***FlyBy Math™* Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.
D. Utilize systems	
Grade-Level Expectation Use and solve systems of linear equations with two variables. (MA 4 1.6)	***FlyBy Math™* Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.
3. Use mathematical models to represent and understand quantitative relationships	
A. Use mathematical models	
Grade-Level Expectation Identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem. **(**MA 4 1.6,3.6)	***FlyBy Math™* Activities** --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
4. Analyze change in various contexts	
A. Analyze change	
Grade-Level Expectation Analyze linear functions by investigating rates of change and intercepts. (MA 4 1.6,4.1)	***FlyBy Math™* Activities** --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.

Strand: Geometric and Spatial Relationships	
4. Use visualization, spatial reasoning and geometric modeling to solve problems.	
B. Draw and use visual models	
Grade-Level Expectation Draw or use visual models to represent and solve problems (MA 2 3.1)	***FlyBy Math™* Activities** --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Strand: Measurement	
1. Understand measurable attributes of objects and the units, systems and processes of measurement.	
A. Determine unit of measurement	
Grade-Level Expectation Identify and justify appropriate units of measure for velocity. (MA 1,2 3.1,4.1)	***FlyBy Math™* Activities** --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.
2. Apply appropriate techniques, tools and formulas to determine measurements.	
E. Use relationships within a measurement system	
Grade-Level Expectation Use unit analysis to solve problems involving rates. (MA 4 3.1)	***FlyBy Math™* Activities** --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Use formulas and graphs to solve and analyze aircraft conflict problems and to communicate results.

Strand: Data and Probability	
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.	
C. Represent and interpret data	
Grade-Level Expectation Select, create and use appropriate graphical representation of data. (MA 6 1.8,3.6)	***FlyBy Math™* Activities** --Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.